Box 1 The impact of COVID-19 on economic statistics

The lockdown restrictions imposed in many countries, in response to the COVID-19 pandemic, negatively affected statistics value chains globally. The restrictions imposed in South Africa, as from 27 March 2020, impacted both the South African Reserve Bank (SARB) and Statistics South Africa (Stats SA) in this respect. Globally, the ability to source relevant input data for the compilation of particular statistics was adversely affected. Policy measures, including fiscal and monetary responses, introduced methodological issues in the measurement of economic activity. These statistics have consequently been distorted with major implications also for the seasonal adjustment of time series. This confluence of events also led to the re-assessment of operational processes within the statistical value chain and the postponement of certain publication dates. Users of these statistics are not only affected by the delay in availability thereof, but also by uncertainty related to the extent of inherent biases due to low response rates and the magnitude of future revisions.

In South Africa, Stats SA announced on 17 April 2020[1] that gross domestic product (GDP) statistics for the first quarter of 2020 would only be released on 30 June 2020 instead of the original release date of 2 June 2020. On 21 May 2020,[2] Stats SA furthermore announced some changes to data collection methods and imputation techniques to provide for the compilation of the April 2020 consumer price index (CPI) to be released on 24 June 2020.

The SARB's media release[3] on 25 May 2020 regarding the impact of COVID-19 on the June 2020 *Quarterly Bulletin* announced a change in the publication date to 16 July 2020 to facilitate the integration of the delayed GDP and other statistics from Stats SA. These delays also impacted the release of the current account of the balance of payments (BOP), which follows that of the GDP by two working days, and it therefore changed from 4 June 2020 to 2 July 2020. The release of the external debt and international investment position statistics as at 31 March 2020 also changed to 16 July 2020, to coincide with the publication of the June 2020 *Quarterly Bulletin* and the balance of payment statistics.

Statistics published by the SARB also started to reflect the COVID-19 distortions. For instance, the SARB's composite leading business cycle indicator for March 2020, as published on 26 May 2020,[4] reflected temporary distortions to some of the component series due to the national lockdown. The liquidity measures in response to COVID-19 are already indicated in the monetary statistics in the SARB's balance sheet on pages S–2 and S–3 of this *Quarterly Bulletin* and the liquidity management operations on page S–29. These measures resulted in an increase in the SARB's holdings of government bonds and liquidity provided to banks on the asset side of the balance sheet, with potential consequences for the monetary base[5] on the liability side. Some of the counter entries show up in the banking sector's balance sheet, such as banks' holdings of government bonds on pages S–9 and S–10 and the statistical counterparts of the change in money supply on page S–24. The fiscal support by government will become visible in the government finance statistics, in particular those for national government revenue and expenditure on pages S–50 and S–51 and the financing of the net borrowing requirement on page S–52, which spill over into national government debt on pages S–54 and S–55. The decline in international trade due to the contraction in global economic activity and the impact of risk aversion on capital flows and exchange rates is evident in the external account statistics on pages S–83, S–84 and S–108, along with foreign debt on pages S–104 and S–105. Changes in financial asset prices and activity in the share, bond, derivatives and foreign exchange markets are reflected on pages S–31 to S–35 and S–107. The national accounts statistics calculated from both the production and expenditure side for the first quarter of 2020, as indicated on pages S–110 to S–137, already show some of the economic impact of the COVID-19 lockdown restrictions. The impact of the pandemic is also evident from the manufacturing and mining production as well as the trade statistics on pages S–140 and S–141, the unemployment statistics on page S–158 as well as the consumer and producer price statistics on pages S–142 to S–146.

The international statistical community responded by creating platforms for interaction among statisticians on methodological issues as well as to provide guidance. The Bank for International Settlements (BIS) created an Irving Fisher Committee (IFC) COVID-19 Statistical eBIS resources page[6] to provide information on statistical initiatives regarding the production, dissemination and use of official statistics in response to COVID-19.[7]

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1 Impact of COVID-19 on Economic Statistics in Statistics South Africa. See http://www.statssa.gov.za/?p=13224

2 Changes to the calculation and publication date of the April CPI. See http://www.statssa.gov.za/?p=13339

3 The impact of COVID-19 on economic statistics released by the South African Reserve Bank. See https://www.resbank.co.za/Lists/News%20and%20Publications/Attachments/9951/COVID-19%20impact%20on%20release%20of%20economic%20statistics%20by%20SARB.pdf

4 Composite business cycle indicators. See https://www.resbank.co.za/Research/Statistics/Pages/CompositeBusinessCycleIndicators.aspx

5 The monetary base is defined as currency in circulation and banks' deposit holdings at the central bank, which comprise required reserve balances as well as excess cash reserves and other deposits.

6 Covid-19 statistical resources. See https://www.bis.org/ifc/covid19.htm

7 How COVID-19 is changing the world: a statistical perspective, 2020 by the Committee for the Coordination of Statistical Activities (CCSA). See https://data.unicef.org/resources/how-covid-19-is-changing-the-world-a-statistical-perspective

The lasting impact on the statistics value chain globally highlighted the need for both timely and high-quality data, inclusive of big and administrative data as well as assistance to reporting agents. The International Monetary Fund (IMF) launched a Special Series on COVID-19[8] to assist compilers with statistical issues such as the treatment of restructured loans, government support to households and businesses, continuity of external sector statistics and the recording of government interventions in fiscal statistics. The Organisation for Economic Cooperation and Development (OECD) launched an 'Official Statistics and COVID-19' workspace[9] to exchange best practices and experiences. Eurostat published numerous guidelines and methodological notes in the context of the COVID-19 pandemic,[10] such as the treatment of time series, statistical implications of policy measures, the estimation and imputation of missing data as well as a note[11] to give guidance on seasonal adjustment to effectively account for the effects of COVID-19 on economic statistics.

The uncertainty of how to interpret affected economic statistics is most prevalent in the CPI[12] and GDP statistics. Current methodological treatment could result in biases in consumer price inflation as certain goods and services were not available for sale, limited outlets that were open for business might not be in the sample, and data collectors could not visit outlets. The restriction on economic activity has led to changes in consumer expenditure patterns that can introduce significant bias in the measurement of consumer price inflation.[13] In the GDP, biases could be triggered by non-responses in sample surveys that included enterprises that ceased to exist but were still included in the survey population.

Stats SA's adjusted methodology for calculating the CPI from April 2020,[14] for as long as any form of restrictions to economic activity remain in place, resulted in the direct collection of prices of goods and services with a combined weight of only 34% in the CPI basket (22% online retail items and 12% mainly services). The prices of items not due for collection, with a weight of 41.5%, were carried forward according to the standard method. Biases could possibly be introduced by the remaining 26.5% of goods and services for which price changes were imputed, mainly by applying the change in the headline CPI to those items. This implies that these goods and services made no contribution to the outcome of the change in the overall headline CPI. If the actual change in the prices of the goods and services not measured was smaller than the change in headline CPI, it would introduce an upward bias, but if the actual change in the prices of those items was larger than the change in headline CPI, it would introduce a downward bias. The assessment of whether there is an upward or downward bias in the CPI outcome would depend on one's opinion of the price changes of these affected goods and services during the assessment period.

The national accounts estimates,[15,16] are based on questionnaires sent out to enterprises in a sample survey drawn from Stats SA's statistical business register. The lockdown period affected response rates and therefore also the scope and coverage, as under these circumstances the surveys are probably not a high priority to some enterprises while others may also not have the appropriate information readily available as financial statements have not been finalised. Furthermore, as enterprises are considered to be active for 18 months after their last value-added tax payment, those that have closed down will still be included in the sample survey, which introduces a bias towards over-estimation of economic activity and gives rise to larger than usual future revisions.

In conclusion, the effects of the COVID-19 pandemic on economic statistics have been far reaching and necessitated statistical agencies to adapt to these challenges in an effort to continue to best inform policy makers under difficult circumstances.

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8 IMF Special Series on COVID-19. See https://www.imf.org/en/Publications/SPROLLs/covid19-special-notes#stats

9 See https://login.oecd.org/?appId=378967&loginThrottled=true&referer=%2Fcommunity%2Fofficial-stats-workspace-covid

10 See https://ec.europa.eu/eurostat/data/metadata/covid-19-support-for-statisticians

11 See https://ec.europa.eu/eurostat/cros/content/treatment-covid19-seasonal-adjustmentmethodological-note_en

12 See https://www.nber.org/papers/w27144

13 See https://www.nber.org/papers/w27352#fromrss

14 See http://www.statssa.gov.za/?p=13339

15 For the compilation of the production-based GDP estimate, see http://www.statssa.gov.za/publications/P0441/P04413rdQuarter2014.pdf

16 http://www.statssa.gov.za/?p=13224